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Co-operative Education System Review

June 1992

Co-operative Education

System Review

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JUNE 1992

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Co-operative Education Review

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NOTE: Copies of the Surveys used are available through Avanell Scherer, Co-ordinator of Business and Co-operative Education

THE GOALS OF CO-OPERATIVE EDUCATION WITHIN THE HAMILTON BOARD OF EDUCATION

TO EMPLOYERS:

1. provides an excellent source of well-trained potential employees, both permanent and part-time;
2. ensures that employers participate directly in the educational process to help keep in-school courses relevant to the changing workplace;
3. provides an opportunity for participating employers to develop supervisory skills;
4. permits business and industry to enhance their corporate image through their direct involvement with the community they serve;
5. provides an opportunity for employers to see the relevance of the in-school training process.

TO SCHOOLS:

1. helps to keep teachers and students aware of current trends in and requirements of business, industry, and labour;
2. helps schools to provide relevant, practical experiences for students that complement and reinforce the material taught in class;
3. supports the efforts of schools to help students make informed educational and career choices;
4. provides schools with the opportunity to reflect the attitudes and expectations of business, industry, and labour in the curriculum.

TO STUDENTS:

1. broadens students' experience by allowing them to apply the knowledge, skills, and attitudes learned in the classroom;
2. provides an opportunity for students to observe and operate equipment that is not available in the school;
3. enhances students' ability to make informed decisions about post-secondary educational and employment opportunities by enabling them to explore possible career plans;
4. helps students to develop good work habits and increased self-confidence;
5. develops students' awareness of business and industrial needs and demands;
6. provides an opportunity for students to obtain permanent employment more quickly because of the experience they have gained;
7. provides students with an alternative method of earning credits;
8. facilitates students' adjustment to the world of work;
9. provides an opportunity for students to obtain a reference to use when seeking employment or admission to post-secondary education programs;
10. enhances students' awareness of the range of employment related to their field of interest.

EXECUTIVE SUMMARY

BACKGROUND

In September 1989, the Ministry of Education implemented a set of Co-operative Education Policies and Procedures of Ontario Secondary Schools. There was a need one year following the implementation date to review the degree to which Co-operative Education within our Board met stated Ministry expectations for program delivery. Since co-operative education began in 1978, there has not been a comprehensive review of program delivery and student outcomes system-wide.

RATIONALE

The purpose of the review was to assess the level of implementation of the Co-operative Education Program in relation to the 1989 Co-operative Education Document, and to examine the area of learning outcomes for students participating in the program in order to:

- determine if the aims, objectives, and method of delivery of our Co-op programs are meeting student and employer needs.
- identify the needs at a system, school, and/or area level.
- plan for future direction of Co-op programs at the secondary level.
- provide teachers with criteria for self-assessment of their Co-op program.

PROCESS

The development of the review survey materials occurred between September, 1990 and June, 1991; the data gathering involving the surveys occurred in Semester I (1991-1992) with the data-analyzing phase occurring between February and April, 1992. The final report was written in May/June, 1992. Data included both qualitative (comments, interviews) and quantitative (rating scales) information. Co-op teams, employers and subject teachers were surveyed regarding PROGRAM DELIVERY. Employers and co-op teachers were surveyed regarding GENERAL PROGRAM OUTCOMES. Parents, employers, co-op teachers, and student (both placement and comparison groups) were surveyed regarding STUDENT OUTCOMES.Co-operative teacher input and expertise was used at various points in the development and data interpretation stages.

CONCLUSIONS

I Program Delivery:

Based upon the results of the 39 items in the School Information Survey, a majority of the co-op teachers perceived our present program to meet or exceed the Ministry of Education policy direction in areas such as:

- student application procedures
- safety delivery to students

- board level co-ordination between co-terminous boards, the Ministry of Education, and the community
- student performance appraisal.

These indicate the strength of our core program.

Areas of concern with respect to the program centred around the following issues:
- lack of program co-ordination within the schools
- program supervision and administration in areas such as on-site monitoring visits and use of computers
- lack of involvement of subject teachers and parents.

II Program Outcomes

The majority of Co-op employers and teachers emphasized the positive aspects of the co-op program. These comments emphasized how the program adequatey provides students with the opportunity to :

- develop a link between education and the workplace
- develop a work ethic
- explore a variety of careers,
- apply and expand skills, and
- understand how in-school curriculum relates to the world of work.

Employers also felt that working with co-op students provided their business with an opportunity to become involved in the community, and to help students mature by treating them as adults. Another important outcome was the large percentage of students who obtain full- and part-time employment as a result of co-op placements.

Suggestions for improvement were that there should be more detailed communication between employers and co-op teachers, employer evaluations need improvement, and more assigned time is needed to allow the teacher to interact at the worksite.

III Student Outcomes

The benefits of the co-op program were expressed repeatedly from all major survey participants: co-op teachers, students, employers, and parents. The comments made by survey participants were overwhelmingly positive. Comments centred around the following goals:
- the exploration of a career,
- the ability to make informed decisions about post secondary educational and employment opportunities,
- the development of good work habits and increased self-confidence,
- the awareness of the range of employment related to a student's field of interest,
- the broadening of the student's experience by the application of knowledge, skills, and attitudes learned in the classroom, and
- the facilitation of the student's transition from school to work.

It was particularly interesting to read the positive comments and support from the parents. These comments centred on the benefits of experiential learning for their sons/daughters. Also, there was a measurable effect on the program by the improvement observed in student skills and knowledge. With respect to students' attitudes and work habits, although certain subgroups of students reported higher outcomes, the whole group did not show significant overall improvement.

While quantitative results concerning student outcomes indicated a strong growth in skills and knowledge, the positive comments from students, employers, co-op teachers, and parents stressed the importance of the co-op program related to the change in attitude of the participating co-op students.

RECOMMENDATIONS

Recommendation #1:	Information from the individual school surveys should be shared with the area supervisors and school personnel from the respective schools. This will assist schools and areas with planning and implementation.

Recommendation #2:	The executive summary will be made available to participating employers and parents, upon request, through the schools.

Recommendation #3:	An action plan and implementation timeline will be developed under the direction of the Business Education/Co-operative Education Co-ordinator during the 1992-93 school year.

Recommendation #4:	The action plan should clearly define the responsibilities at the system, area, and school levels. As part of the action plan, the following should be included: • areas of concern identified in program supervision and administration such as: - ownership of the program by subject teachers, and - on-going role played by parents in the program. • areas of concern identified in program supervision and administration such as on-site visitations by the co-op teacher, co-ordination of program delivery in the school, and the availability of computers and data base for the program.

Co-operative Education Review

Process/Timeline

Sept. 1990 Initiation of the Review by the Co-op Consultant
- Consultations with:
  - Superintendent & Assistant Superintendent of Program
  - Program Research Analyst
  - Co-op Teachers
  - Co-op Co-ordinator, Durham Board of Education
- Creation of Steering Committee

Feb. - June 1991 Planning and Development
- In-service with Co-op Teachers
- Creation of a Working Committee
- Clarification of Program Goals; Development of levels of use chart based on Hamilton's Program and Ministry of Education Co-op Policies and Procedures, 1989
- Development of surveys with input from two major employers and four co-op students

Sept. 1991-May 1992 Implementation

Sept. 1991
- Week 1 ..... Student "Pre" Survey, Semester I group
- Week 2 ..... Student "Pre" Survey, Semester II group
- 30th ..... Co-op Teachers Meeting: Select Working Committee

Oct. 1991
- ..... Working Committee: Develop School Team Survey and Interview
- ..... Working Committee: In-Service on Interviewing

Nov. 1991
- Week 1-2 ..... School Co-op Team Survey
- Week 3-4 ..... School Co-op Team Interview

Jan. 1992
- Week 1-3 ..... Employer Survey
- Week 1-3 ..... Parent Survey
- Week 1-3 ..... Student "Post" Survey, Semester I group
- Week 1-3 ..... Student "Post" Survey, Semester II group
- Week 1-3 ..... Teacher Survey

Feb. 1992
- ..... Steering Committee/Working Committee: Data Analysis and Summary of Results

Mar. 1992
- ..... Steering Committee/Working Committee/Employers/Students: Data Evaluation - Conclusions and Recommendations

Apr. 1992
- ..... Final Report Completed

May/June 1992
- ..... Report to Superintendent of Program and Development Committee

1992 - 93
- ..... Implementation of approved Review Recommendations

METHOD AND RESPONSE RATES

Participants	for PROGRAM DELIVERY	for PROGRAM OUTCOMES	for STUDENT OUTCOMES
1. EMPLOYERS	• 20 program description items selected for relevance to employers. • Rated 1-9: How important is this? How well is it being done? • RESPONSE RATE: 90 organizations responded regarding 155 job placements	• 5-item survey relating to "Goals of Co-operative Education to Employers" • RESPONSE RATE: 152 employers/supervisors reported	• Following semester I student placements, employers completed a 13-item survey for each student employed relating to "Goals of Co-operative Education to Students" • Survey delivered to students in class who delivered to employers who mailed to Research Services. • RESPONSE RATE: Employers responded regarding 133/433 students, 31%.
2. STUDENTS I) Co-op placement in Semester I (Placement Group) II) Co-op placement in Semester II (Comparison Group)	Students not surveyed.	Students not surveyed.	• 19 item survey relating to "Goals of Co-operative Education to Students". • For comparison to Group I students, those enrolled in Co-op, but not placed until semester II, completed surveys at the beginning and end of semester I while they attended regular classes. • Student surveys distributed by co-op teachers in class. • RESPONSE RATE: Overall 471/1144 = 41% of 1991-92 Co-op students responded PRE placement & POST placement (Sem. 1 - 54%, Sem. 2 - 26%).

Participants	for PROGRAM DELIVERY	for PROGRAM OUTCOMES	for STUDENT OUTCOMES
3. CO-OP TEACHERS/TEAMS	• 39-item survey describing characteristics of the school program on a scale of 1-9 where 4, 5, & 6 represent the Ministry goals for Co-op program delivery. • Interviews with school teams by a member of the Working Committee to identify factors "inhibiting" and "enhancing" attainment of Ministry goals. • RESPONSE RATE: All schools with students in Co-op first semester were surveyed and interviewed.	• Individual Co-op teachers completed a 4-item survey relating to "Goals of Co-operative Education to Schools." • RESPONSE RATE: 23/38 = 61%.	• For each semester I Co-op student, individual teachers were asked to complete a 13-item survey relating to "Goals of Co-operative Education for Students." • Surveys distributed to schools and returned in Board mail. • RESPONSE RATE: Teachers responded regarding 274/433 students, 63%.
4. PARENTS	Parents not surveyed.	Parents not surveyed.	• 13-item survey relating to "Goals of Co-operative Education to Students" • Surveys distributed to students in class and given to parents who mailed in. • RESPONSE RATE: Parents responded regarding 156/433 students, 36%.
5. SUBJECT TEACHERS	• 14 items selected for relevance to subject teachers. • rated 1-9: How important is it? How well is it being done? • Sample = subject area within a school with 10 or more co-op students. • RESPONSE RATE: 8/23 = 35%.	Subject teachers not surveyed.	Subject teachers not surveyed.

REVIEW RESULTS

This section considers the results both of program delivery as it applies to the Ministry of Education policy document and the student and employer outcomes resulting from the co-op program.

EMPLOYERS AND CO-OPERATIVE EDUCATION TEACHERS RE: I - PROGRAM DELIVERY

The results of these surveys are as follows:

AREAS OF STRENGTH

1. **Ministry Goal:** A detailed application form is submitted by each student.
   Outcome: Ten schools were above the goal. The reason for the outcome was attributed to the organization of the co-op teachers and the co-operation of subject teachers within the schools in completing and returning student reference forms.

4. **Ministry Goal:** The school course calendar identifies all the subject areas which have co-operative education components giving course descriptions for each.
   Outcome: Eight schools expressed the opinion they were above the goal. Organization and support within the school were cited as the primary reasons for attainment of the goal.

5. **Ministry Goal:** Student file contains: application form, teacher references, a record of prior completed credits, attendance and results of co-op and guidance teacher interviews.
   Outcome: All thirteen schools' co-op staff felt this goal was reasonable and attained because of staff support.

Ministry Goal: Safety is a major topic.
Outcome: Ten schools were above the goal because of availability of resources on safety. Employers indicated that this goal was very important and was being done very well.

30. **Ministry Goal:** Personnel at the board level provide a liaison between co-terminus boards the Ministry of Education, and the community.
Outcome: Eights schools expressed the opinion we were above the goal because the Board has provided a Co-op Consultant.

36. **Ministry Goal:** Three formal written performance appraisals are completed for each student.
Outcome: Ten schools were above the goal both in evaluation through written employer appraisals and in the completion of student projects. Employers indicated the goal was very important and is being very well done.

AREAS IDENTIFIED FOR FURTHER ATTENTION

10. **Ministry Goal:** An individual training plan is developed within the first two weeks of the placement by the Co-op teacher and the on-site supervisor.
Outcome: Nine schools were below the goal. The Ministry timeline of two weeks was not sufficient. If computers were available, the Ministry timeline might be more reasonable. Regardless of the timeline, employers indicated that a training plan was very important and was being done reasonably well.

12. **Ministry Goal:** Short- and long-term planning occurs involving a variety of strategies WITH INPUT from parents, subject teachers, co-op supervisors, and students.
Outcome: Nine schools were below the goal because parents are not usually involved. Subject teachers seem to be involved on a regular basis only when co-op is subject-based. Employers indicated the goal was very important and perceived it to be reasonably well done.

20. **Ministry Goal:** If the monitoring teacher is not qualified in the subject area, two of the visitations include a teacher 'Qualified' in that subject.
Outcome: Eight schools were below the goal primarily because of the lack of availability and willingness of 'qualified' subject teachers to accompany the co-op teacher on the visits. Our employers see the goal as somewhat important and perceived it to be reasonably well done.

21. **Ministry Goal:** Three on-site visitations for every out-of-school credit occurs.
Outcome: Ten schools were below the goal. The teachers expressed the opinion that the lack of time prevented them from achieving the goal. They also expressed the feeling the employer did not want the number of teacher visits suggested by the Ministry. Our employers felt the Ministry goal was very important and was being carried out reasonably well. (Note: Employers may have perceived the goal as three visitations per student placement when, in fact, a majority of students receive two credits and thus would require six visitations.)

26. **Ministry Goal:** Co-op teachers have adequate timetable allowance.
Outcome: Eight schools were below the goal. Reasons given included the lack of available time and too many students per timetable line (as per contract, 1 line for 13 students - composite schools; 1 line for 12 students - vocational schools). Lack of understanding by administration of the time and detail required by the program was also considered a factor.

27. **Ministry Goal:** A qualified individual is in a position of responsibility to co-ordinate program delivery in the school.
Outcome: (Note: Hamilton currently has no department heads in co-op.) Eight schools were below the goal because no positions of responsibility were designated. Informal delegation of responsibility may have been assigned in the other schools.

32. **Ministry Goal:** (Under the heading of Program Resources). Ready access to a computer and telephone is available.
Outcome: Eleven schools expressed the opinion that they were below the goal. It was felt that the lack of computers as a resource did not allow them to meet the Ministry Goal for effective program administration.

. **Ministry Goal:** The co-op teacher, subject teacher, student services, school administration, parents, and employer/supervisor act as resources for students. Secretarial support is available.
Outcome: Nine schools were below the goal. The responses centred around lack of support staff. Our employers believed the overall goal to be very important and perceived we were doing reasonably well.

38. **Ministry Goal:** Students, employers, and parents are given an opportunity to evaluate the course, training station, and related classroom activities.
Outcome: Eight schools were below the goal because co-op staff felt it was unreasonable to expect parents and employers to evaluate **all** aspects because of their lack of involvement in some areas. Employers indicated the goal was very important and perceived it was being reasonably well done.

SUBJECT TEACHERS RE: PROGRAM DELIVERY

Selected subject teachers whose students were participating in co-op semester one, and whose co-op credits were tied to that teacher's subject, were requested to complete the subject teachers' survey.

The response rate from subject teachers was very weak. The reasons for such a response might be attributed to one or more of the following:

- the survey was administered toward the end of January, 1991. This could have conflicted with other subject-teacher activities at the conclusion of the semester.
- the process of working with department heads may require improvement to communicate more effectively with subject teachers.
- the subject teachers may feel insufficient ownership of the program to comment about it in the kind of detail required by the survey.

The steering committee strongly believed the final reason stated above accounted for the low response rate. The committee, as part of the recommended action plan, urges special attention be focused on this issue.

II - PROGRAM OUTCOMES

Comments of Employers re: Program Outcomes

The following comments are in response to the Co-operative Education Program goals. (Employer Information Survey Section A,)

Positive Comments	Negative Comments	Neutral Comments
41	7	17

The majority of the positive comments centred around the co-op program providing a link between education and the world of work, the development of a work ethic, and the opportunity for career exploration.

Other positive comments emphasized the benefits of community involvement in education, development of skills, the contribution of students to the workplace, the relevance of in-school curriculum, the opportunity for students to be treated as adults and, in a few cases, full and part-time jobs.

Examples:

- "We feel the program has worked very well in exposing the student to various professions and will likely help them in their future career choices."
- "The opportunities for both staff and students who are involved in this program are extremely valuable for skill development."
- "Co-op students are treated as regular employees, so our staff deals with them as co-workers rather than in a supervisory capacity."
- "We greatly enjoy the opportunity to show a student the reality of work and the value of the educational component."
- "It is very important for the employer to assist in the education of the student."

Suggestions:

- need better matching between student/employer expectations
- need improved public relations
- inform employers what is learned in orientation and reflective learning
- employer evaluations need improvement (more specific yet simple)
- more assigned time needed to allow the co-op teacher to interact at the worksite

REVIEW RESULTS

III - STUDENT OUTCOMES

This report presents qualitative results in the form of comments made by all participants, and quantitative results obtained from the rating scales that participants were asked to complete.

The student surveys were administered prior to and following the first semester of the 1991-92 school year to co-op students who were placed in jobs in first semester (the "Placement" group), and to those who would not be placed until second semester (the "Comparison" group). The surveys contained 14 student outcome items. The relationships among these 14 items were analyzed[T1] to determine whether they each represented a different outcome, or whether some or all were measuring the same outcome. (Appendix IV). Results indicated that the 14 student outcome items are effectively described by two constructs: Skills and Knowledge[T2] and Attitudes and Work Habits[T2].

"Skills and Knowledge" and "Attitudes and Work Habits" were evaluated further to answer the following questions about the nature and extent of program effectiveness:

1) Does the co-op program and placement have significant effects on student "Skills and Knowledge" and/or on student "Attitudes and Work Habits"[T2]?

2) If so, how important are these effects?

Results of a multiple regression analyses[T3] addressing these questions are presented in Tables 1 and 2. In summary, students placed in co-op demonstrated a significant advantage over students not placed on items related to "Skills and Knowledge" gained from co-op experience (eg. working with others, making decisions, etc.). With respect to "Attitudes and Work Habits," a significant gain was not apparent for the group as a whole, but was evident for female co-op students, advanced level students, and for those planning to go to university.

TABLE 1 - SKILLS AND KNOWLEDGE

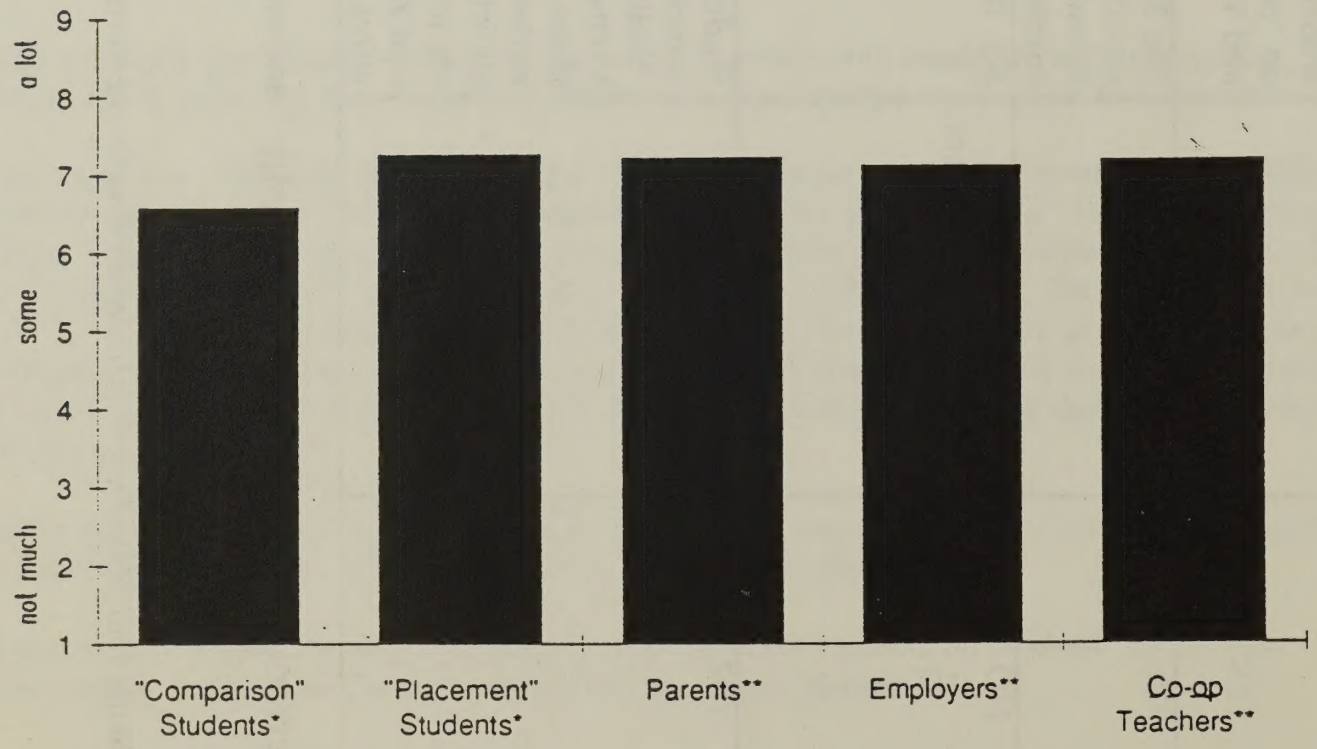
Factors Evaluated	Significant Effect?	Size of Effect*	Interpretation
Skills and Knowledge reported in Sept. Attitudes and Work Habits reported in Sept.	YES YES	13% 1%	These factors were included to control students' (Sept.) expectations of co-op effects on "Skills and Knowledge" and "Attitudes and Work Habits."
Exceptional Student Status	YES	1%	The 37 exceptional students in the study reported lower gains in "Skills and Knowledge" than non-exceptional students[T4].
• Type of Job[T8] • Gender • Year (9-OAC + Adult) • Type of Subject Linked to Placement[T8] • Plans After Graduation (job, college, university, etc.)	NO	(Though not individually significant, in total, these factors accounted for 2%).	See T8
Co-op Placement[T5]	YES	6%	Students placed in a co-op job during first semester reported significantly higher "Skills and Knowledge" outcomes relevant to co-op at the end of the semester than those who attended school during the same period. Co-op placement, thus, had a statistically significant effect, accounting for 6% of the change in self-report[T6] of "Skills and Knowledge," a commendable program effect.

Total amount of change in student perceptions of "Skills and Knowledge" accounted for by the factors studied: 23%

** Read "__% of the change in student "Skills and Knowledge" is associated with the corresponding factor evaluated..*

Figure 1. Outcomes in Student "Skills and Knowledge"

Co-op placement students, their teachers, employers and parents felt that the program had "a lot" of effect on related "Skills and Knowledge".



* Student scores are adjusted for the effects of factors listed in Table 1.

** Parents, employers and Co-op teachers were surveyed only for "Placement" students.

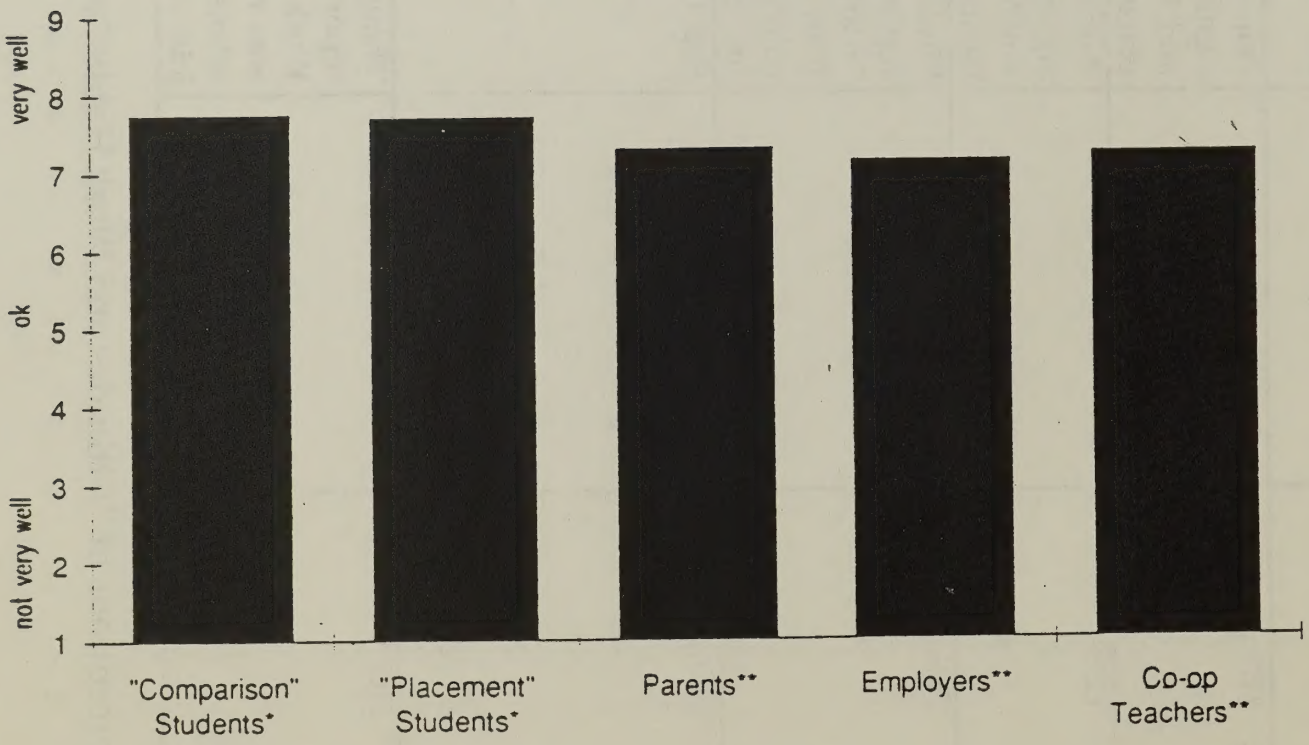
TABLE 2 - ATTITUDES AND WORK HABITS

Factors Evaluated	Significant Effect?	Size of Effect	Interpretation
Attitudes and Work Habits reported in Sept.	YES	41%	See "Co-op Placement" below.
Gender	YES	less than 1%	Female students (n=241) reported significantly higher outcomes in "Attitudes and Work Habits" following co-op placement than male students (n=137).
Level in School	YES	1%	Advanced level students (n=222) reported significantly higher outcomes in "Attitudes and Work Habits" than general (n=149) and basic (n=7) level students.
Plans following high school	YES	2%	Students intending to go to university reported (n=129) significantly higher "Attitudes and Work Habits" outcomes than those intending to go to community college (n=166) or into the work force (n=58).
• Skills and Knowledge reported in Sept. • Type of Job [T8] • Year in School (9-OAC + Adult) • Type of Subject Linked to Placement [T8] • Exceptional Student Status	NO	0%	See T8
Co-op Placement	NO	0%	Though certain subgroups of students report higher outcomes in "Attitudes and Work Habits" than others (see above), there was no significant improvement for the whole group of co-op students placed in jobs compared to those not placed.

Total amount of change in student perceptions of "Attitudes and Work Habits" accounted for by the factors studied: 44%

Figure 2. Outcomes in Student "Attitudes and Work Habits"

Co-op placement students and comparison students both reported high levels of "Attitudes and Work Habits", as did their employers, parents and teachers, though at slightly lower levels.



* Student scores are adjusted for the effects of factors listed in Table 2.

** Parents, employers and Co-op teachers were surveyed only for "Placement" students.

Comments of "Placement" Students September 1991

Positive Comments	Negative Comments	Neutral Comments
64	0	5

The vast majority of positive comments were related to program goal #3 "enhances students ability to make informed decisions about post secondary educational and employment opportunities by enabling them to explore possible career plans," and goal #10 "enhances students' awareness of the range of employment related to their field of interest." A few of them related to goal #1 "broadens students' experience by allowing them to apply the knowledge, skills, and attitudes learned in the classroom," goal #5 "develops students' awareness of business and industrial needs and demands," goal #7 "provides students with an alternate method of earning credit," and goal #8 "facilitates students' adjustment to the world of work."

EXAMPLES:
- "I think co-op gives students a chance to find out what they want to do in the future."
- "Co-op is a great chance to decide what you want to do after high school."
- "I hope this co-op program helps me out with my career."
- "I'm hoping my co-op placement will give me an advantage in applying to college."

Comments of"Placement" Students January 1992

Positive Comments	Negative Comments	Neutral Comments
121	14	2

The majority of comments were positive and related to career exploration and adjustment to the world of work.

EXAMPLES:
- "I enjoyed my co-op placement and felt it helped me realize some of the expectations of a career in the medical field."
- "Co-op gives students a chance to learn while working in an adult environment."
- "Co-op is the best thing that happened to me. I'm very excited about my future."
- "Co-op has opened my eyes to the ways of the working world. I feel I've learned more in co-op than the first four years of my high school life."

Comments of "Comparison" Students September 1991

Positive Comments	Negative Comments	Neutral Comments
45	3	5

The vast majority of the positive comments related to goal #3 "enhances students' ability to make informed decisions about post secondary educational and employment opportunities by enabling them to explore possible career options," and goal #10 "enhances students' awareness of the range of employment related to their field of interest." A few related to goal #4 "helps students to develop good work habits and increased self-confidence," goal #7 "provides students with an alternative method of earning credits," and goal #8 "facilitates students' adjustment to their world of work."

EXAMPLES:
- "Co-op will help me in having some real experience."
- "I hope that my co-op placement will enrich my background in dealing with the public."
- "I think this will help me in my future career plans."

Comments of"Comparison Students January 1992

Positive Comments	Negative Comments	Neutral Comments
27	1	5

The majority of comments were positive and related to career plans.

EXAMPLES:
- "Many of my friends have taken co-op and really enjoyed it."
- "I hope that my co-op placement will help me decide what career I want to get into. School's very important and a university education to me is a necessity."
- "I feel that co-op is a valuable opportunity to gain some real-life practical experiences."

Comments of Co-op Teachers re: Student Outcomes

Positive Comments	Negative Comments	Neutral Comments
24	5	0

The majority of co-op teachers emphasized the personal growth of students (re: confidence and maturity) as well as the adjustment of the student to expectations in the world of work. The other group of comments generally centred around the positive experience of co-op in general for the student.

EXAMPLES:

- "Her attitude and work habits have improved immensely in this placement. Her self-concept has been enhanced by all the positive feedback."
- "He has even encouraged his friends to stay in school and do well because he learned how demanding the work force is!"
- "An excellent student who is being recommended for part-time and summer employment."

Comments of Parents re: Student Outcomes

Positive Comments	Negative Comments	Neutral Comments
75	5	4

The majority of positive comments related to the students making better career/future plans, developing better work habits, improving self-confidence, and facilitating students' adjustment to the world of work:

EXAMPLES:

- "This program has boosted my daughter's self-esteem. She is much more positive and self-motivated now."
- "My son learned to work on his own and be responsible for his own actions."
- "The best thing that ever happened to my son. He can now identify with his career choice. Co-op should be mandatory in grades 11 or 12."
- "First-hand experience is ten times more valuable than a mother's advice."
- "This co-op course has changed him to such a degree. He is not the same boy. Taking this course has changed him from a boy to a "responsible man". Now he wants to go to college. Excellent progress in such a short time."
- " . . . she began to hate school and this gave her the needed break away from regular school. In turn, she is anticipating going back to a regular classroom setting next semester."

Comments of Employers re: Student Outcomes

Positive Comments	Negative Comments	Neutral Comments
41	5	11

The positive comments centred around the areas of personal growth (independence, confidence, responsibility, creativity, reliability, team work, decision-making, initiative), career development and exploration and the development of skills related to the 'real world' (eg. work ethics, job performance, communication).

The negative comments focused on improving student evaluation forms.

EXAMPLES:

- "She has become a great deal more independent and confident in her work habits."
- "Because of this placement, she has found something she likes to do and may be capable of doing in the future."
- "The co-op program gives students an idea of what career is suitable for them."
- "The placement allows the student to experience the real world."
- "The student we had this term was an asset to our team."
- "He was responsible, reliable, creative, and worked well with others."
- "The student has to work with a team of professionals and is considered a team member. The student is exposed to a wide variety of health care programs and procedures."
- "I think greater emphasis should be on the professional image of paper work - journals, assignments."
- "The co-op program is invaluable for students to see what the "real world" is all about. It may direct them toward future career selections."

appendices

Hamilton Board of Education
Co-operative Education

LEVELS OF USE CHART

STUDENT NEEDS: the modification of program to accommodate individual differences

	1	2	3
1. Assessment of Individual's Needs/Differences A. Application form B. Interview C. Personnel involved	An application form is submitted by each student. An interview between the co-op teacher and student is held. The assessment process does not involve all the potential partners: administration, parents, guidance personnel, and subject teachers.	A detailed application form is submitted by each student. A structured interview is conducted prior to the start of the course between the co-op teacher and potential co-op student. Administration, parents, guidance personnel, and the subject teacher are all involved in the assessment of the student. Counselling occurs to match the student's educational and career goals. Student is interviewed by the employer.	A detailed application form, along with teacher references, is submitted by each student. Interviews are conducted by the co-op teacher, subject teacher, and guidance personnel. In addition to counselling, assessment and interest testing is conducted to determine student ability level and goals.

2. Resulting Documentation A. Course calendar B. Record of teacher observations	The school course calendar identifies Co-operative Education as a mode of delivery to meet individual student needs. Some results of teacher observations are recorded and maintained in student files.	The school course calendar identifies all the subject areas which have co-operative education components and gives course descriptions for each. The student file contains the application form, teacher references, record of prior successfully completed credits, and results of co-op and guidance teacher interviews.	In addition, interest test results and records of all interviews are kept in student files.
3. Eligibility A. Restrictions	One or two restrictions are in place.	Students in senior level courses at all levels of ability are eligible. Students in junior level courses are eligible upon recommendation of the principals. The in-school component must have been successfully completed no later than the previous school year or being taken concurrently with the out-of-school component.	Students of diverse levels of ability are actively encouraged to participate throughout their high school career.
4. Relationship Between Assessment and Program Modification A. Program modification	Some program modification has occurred but not in all potential program areas.	Standard program caters to the needs of students based on modification of time, placement variety, content, and credit value.	Multiple programs are in place to meet individual student exceptionalities. Modification is an ongoing process.

PLANNING: the organization of all instructional components to achieve program objectives

	1	2	3
1. Pre-placement Orientation A. Hours B. Personnel C. Focus	Some pre-placment orientation occurs. **Pre-placement orientation is delivered by the co-op teacher to a group of students with a minimum 10 hours prior to placement, where safety is a major topic.**	Pre-placement orientation is delivered by co-op teachers for students in group environment with a minimum of 20 hours prior to student placement. Safety is a major topic.	Pre-placement orientation exceeds 20 hours.
2. Student Training Plans A. Personnel involved B. Timing C. Approval D. Link to subject area E. Sequential training objectives F. Update/ modification	A training plan is developed before the student placement finishes. **An individualized training plan is developed within the first month of the student's placement by the co-op teacher and the on-site supervisor. Update and modification of T.P. occurs over the course of the student placement.**	An individualized training plan is mutally developed by the student's on-site supervisor and the teacher responsible for the monitoring and evaluation of the student. The training plan is developed within the first two weeks the student is at the placement. The training plan approved by the principal's delegate is linked to the in-school subject area and reflects the sequential training objectives. Update and modification of the training plan occurs over the course of the student placement.	An advisory committee is involved in the development of the training plan. The student is involved in the generation and updating of the training plan.

3. Program Planning A. Personnel B. Term C. Goals/Strategies	Planning occurs for the group but not the individual student. In addition to the co-op teacher, some of the other parties are involved. **Short- and long-term planning occurs involving a variety of strategies that could allow input from parents, subject teachers, co-op supervisors, and students.**	Short- and long-term planning occurs, involving a variety of instructional strategies with input from parents, subject teachers, co-op supervisors, and students.	Advisory committees including all participants and community representatives **are involved in establishment of short- and long-term goals and instructional strategies.**
4. Employer Selection A. Work Placement/Site Evaulation	Employers are initially screened but are not involved in planning during the initial student placement. **Employers are surveyed to determine what requirements of the program can be provided and involved during the student's placement.**	Employers are pre-screened to ensure requirements of the program will be met and are mutually involved in planning during the student placement.	In addition to pre-screening and mutual formative planning, mutual summative evaluation of all co-op employers occurs relating to future program participation.

INTEGRATION: the relationship between the in-school and out-of-school activities

	1	2	3
1. Integrative Learning A. Hours B. Strategies C. Personnel	The co-op teacher organizes FEWER than 10 hours of scheduled integrative/ reflective learning. Some but not all strategies are utilized.	The co-op teacher organizes ten hours of scheduled sessions throughout the out-of-school term with the students meeting together as a group. A variety of strategies are used including seminar presentations, logs, diaries, observation reports, and journals.	More than 10 hours of integrative/reflective sessions are held either at the school or off-site and may include parents, peers, supervisors, and other resource people.
2. In-School and Out-of School Component A. Strength of relationship	The out-of-school component may be vaguely or not at all related to the in-school course of study.	The out-of-school component is directly related to the in-school course of study.	The out-of-school component is directly related to the in-school course of study, providing enrichment opportunities for individual students.

STRATEGIES: the methods and learning activities used to achieve the objectives of the program

	1	2	3
1. Variety A. Individual student strengths and needs B. Curriculum objectives C. Effective use of available resources D. Current research E. Program evaluation	A variety of teaching and instructional strategies are used on a regular and planned basis, with emphasis on two criteria: a) achieving objectives of the program b) employing resources effectively	A wide variety of teaching and instructional strategies are used on a regular and planned basis considering: a) individual student strengths and needs b) objectives of the program c) available resources Examples: group work, case studies, independent study, etc.	An integration of flexible teaching and instructional strategies with the total school program is used systematically considering: a) individual student strengths and needs b) objectives of the curriculum c) available resources d) current research e) program evaluation
2. School/Employer/Student Involvement A. Personnel B. Extent/nature of involvement	The co-op teacher directs student learning with input from the student and employer/supervisor. **Teacher arranges placement and employer directs student learning.**	Subject teachers, employer/supervisors, and students are often encouraged to assist in the planning and design of methods and learning activities.	Subject teachers, employer/supervisors, and students are systematically encouraged to make team program design decisions such as choosing a co-operative learning style throughout the Co-op experience. Advisory committees play a supportive role.

MONITORING: the process involving visitation of training stations to evaluate student progresss

	1	2	3
1. Human Resources A. Personnel	On-site monitoring involves the co-op teacher, student, and training station supervisors.	On-site monitoring involves the co-op teacher, subject teacher, student, and training station supervisors.	The co-op teacher, the student's in-school subject teacher, and other appropriate personnel, both school and community, are involved in the monitoring process. **(Learning Resource Teacher, Gifted Teacher, Community Resource Person)**
2. Time Structure A. Personnel B. Teacher qualification	**One to two visitations to the training station occurs for every out-of-school credit.**	Three on-site visitations for every out-of-school credit occurs. If the monitoring teacher is not qualified in the subject area, two of the visitations includes a teacher "qualified."	Four or more on-site visitations occur for every out-of-school credit. The distribution and duration of the monitoring visitations meets the needs of the students and the training station.

3. Strategies A. Observation/ discussion B. Student skill focus C. Reports	Some evidence of on-site monitoring occurs. Observation occurs but discussion of student progress does not involve all parties.	The monitoring process encompasses both the teacher's observation of the student's performance of tasks and a discussion that includes both the student and the training station supervisor. Focus is on the student's acquisition of psychomotor skills as reflected in the training plan as well as development in the affective and cognitive domain. Logs and journals are utilized. Dated anecdotal reports are maintained for all students and include details of new learning, attitude changes, training plan updates, and comments made by both the student and supervisor.	Monitoring is both formative[1] and summative[2]. Off-site monitoring is utilized involving students, training station supervisors, the school, and other appropriate personnel.

[1] Formative: ongoing, for the purpose of re-designing the program, revising strategies as necessary

[2] Summative: at the end, a summary of overall success of strategies/placement.

PROGRAM SUPERVISION: the co-ordination of program delivery

	1	2	3
1. Teacher A. Qualification B. Timetable allowance	Co-op teachers are qualified but have inadequate timetable allowance to carry out effective program supervision.	Co-op teachers are qualified and have adequate timetable allowance for effective program supervision.	**Qualified** Co-op teachers have additional time to modify the program to represent changing student needs. Opportunities are available for research, innovation, refinement, and extension of the program.
2. School A. Personnel B. Consistency	Some co-ordination exists but there is no position of responsibility.	The school program is supervised by a qualified individual appointed to a position of responsibility. Co-ordination of the courses within the school ensures that policies and procedures are consistent.	An advisory committee assists the Co-operative Education Department in supervision of program.
3. Board A. Personnel B. Liaisons	Some co-ordination exists with limited assistance to schools in the area of placement, policies, and procedures.	There is board level placement co-ordination and provision for consistency of policies and procedure. Personnel at the board level provide liaison between co-terminus boards, the Ministry of Education, and the community.	The sharing of resource personnel exists between co-terminus boards of education. Liaison occurs between board level co-operative education personnel and personnel from other curriculum areas.

RESOURCES: all the people, materials, and places used in achieving the objectives of the curriculum

	1	2	3
1. Program aids A. Materials/ equipment	Either audio/visual materials or printed material are not available. Access to a telephone is available. No access to on-line computer.	Audio/visual materials are available for use as well as manuals or textbooks. Ready access to a computer and telephone is available.	Technical equipment and printed material is available to meet both program needs and student exceptionalities. New materials reflecting current research are introduced to refine and extend the program.
2. Human A. Personnel	The co-op teacher and the employer/supervisor act as resources for students.	The Co-op teacher, subject teacher, student services, school administration, parents, and employer/supervisor act as resources for students. Secretarial support is available.	Other community organizations and co-terminus boards act as resources for students.
3. Physical A. Meeting place	Co-op office exists. Pre-determined space for in-school sessions is available.	An assigned and suitable meeting place for in-school sessions exists.	Space for in-school program sessions is made available to meet the transitional and on-going need of students. **Community space is utilized.**

EVALUATION: the process used to measure and judge student growth toward achieving stated objectives

	1	2	3
1. Strategies A. Appraisal form B. Training plan C. Weekly log D. Assignments E. Pre-employment orientation F. Self-evaluation G. School policy (Personnel: see 3 below)	Limited use is made of the student's appraisal form, training plan, weekly logs, tests, assignments, and pre-employment orientation. Infrequent discussions occur between all parties involved in student achievement.	The procedure for evaluation complies with the school's existing policy and is stated before the program begins. A discussion occurs among the student, employer/supervisor, Co-op teacher and subject teacher (where applicable) based on observation of student performance in relationship to the training plan. A performance-appraisal form and individualized training plan combine anecdotal and numerical rating to assess student progress. The remainder of the evaluation is based on the student's weekly logs and journals, tests, assignments, pre-employment orientation, and self-evaluation.	Community resources and the school take a major role in assisting the student to utilize the evaluation procedure as a basis for decision making. Eg: a community agency provides counselling regarding career paths. The process contributes to the planning and development of short- and long-term career and life goals consistent with student's abilities and aspirations.
2. Time Structure A. Summative B. Formative	Two formal written performance appraisals are completed for each student.	Three formal written performance appraisals are completed for each student.	In addition to three formal appraisals, continuous student evaluation of a formative nature takes place.

3. Employer/co-op teacher/student/parent involvement A. Personnel	The co-op teacher and employer/supervisor are involved in the evaluation of student progress.	The student, employer/ supervisor, and co-op teacher are involved in the evaluation of student progress.	The student, employer/ supervisor, co-op teacher, and parent are all involved in evaluation of student progress. Other community and school personnel assist in student assessment.
4. Program A. Personnel B. Formative (ongoing) C. Summative (final outcomes)	Some but not all of the parties, in conjunction with the teacher, assist in program evaluation.	Students, employers, and parents are given an opportunity to evaluate the course including the training station and related classroom activities. Teachers evaluate training stations, including health and safety regulations, on a regular basis.	A systematized, continuous form of evaluation occurs with a formative and summative nature. There is evidence that the program is responsive to modification based on assessed needs.

5. Record Keeping A. Types of information B. Timelines	The teacher maintains the following records for each student: a) the work education agreement form b) the number of hours the student will be at the training station c) dated anecdotal records of monitoring activities d) the students' individualized training plan e) the students' individualized appraisals or evaluation forms. f) the student's weekly logs	The aforementioned records are complete in the student's file within the recommended time-lines.	Other pertinent records are included in the student's file: a) the student's application to the co-operative education program b) teacher references for the student c) an outline of pre-placement orientation topics successfully completed by the student d) a record of the visits made to the training station by teachers other than the designated co-operative education teacher e) union memorandum of agreement where applicable

Appendix II

SCHOOL INFORMATION SURVEY
STATISTICAL SUMMARY

Ministry Goal	#of Schools Below	# of Schools At	# of Schools Above	No Response
1) A detailed application form is submitted by each student.	1	2	10	
2) A structured interview is held between potential student and co-op teacher prior to the start of the course.	1	9	3	
3) All of the above are involved in student assessment. Counselling occurs to match student education and career goals, and student is interviewed by the employer.	6	7	nil	
4) The school course calendar identifies all the subject areas which have co-operative education components giving course description for each.	4	1	8	
5) Student file contains; application form, teacher references, a record of prior completed credits, attendance and results of co-op and guidance teacher interviews.	nil	13	nil	
6) Students in senior level courses at all levels of ability are eligible when the in-school component is taken concurrent or no later than the previous school year. Junior level students are eligible only upon principal's approval.	2	6	5	
7) Standard program caters to the needs of students based on modification of time, placement variety, content, and credit value.	2	4	7	
8) A minimum of 20 hours of pre-placement orientation [illegible]rs.	4	8	1	
[illegible]afety is a major topic.	nil	3	10	
10) An individual training plan is developed within the first two weeks of the placement by the co-op teacher and the on-site supervisor.	9	3	nil	1
11) The approved training plan is linked to the in-school subject area and reflects sequential training objectives.	4	4	5	
12) Short-term and long-term planning occurs involving a variety of strategies WITH INPUT from parents, subject teachers, co-op supervisors, and students.	9	3	nil	1
13) Employers are pre-screened and involved in planning.	1	6	5	1
14) Students are given 10 hours of reflective learning.	4	5	4	
15) A variety of teaching strategies is used including seminar presentations, logs, diaries, observations, reports, and journals.	1	5	7	
16) The out-of-school component is directly related to the in-school course of study.	1	10	2	

SCHOOL INFORMATION SURVEY
STATISTICAL SUMMARY
cont'd

Ministry Goal	#of Schools Below	# of Schools At	# of Schools Above	Ministry Goal
17) A wide variety of teaching and instructional strategies is used on a regular and planned basis considering: • individual student strengths and needs • objectives of the program • available resources Examples: group work, case studies, independent study, etc.	1	8	4	
18) Co-op teacher directs student learning, and subject teachers, employer/supervisors and students are often encouraged to assist in the planning and design of methods and learning activities.	5	7	nil	1
19) On-site monitoring involves the co-op teacher, subject teacher, student, and training station supervisors.	4	9	nil	
20) If the monitoring teacher is not qualified in the subject area, two of the visitations include a teacher "Qualified."	8	1	4	
21) Three on-site visitations for every out-of-school credit occurs.	10	1	2	
22) The monitoring process encompasses both the co-op teacher's observation of the student's performance of tasks, and a discussion that includes both the student and the training station supervisor.	nil	11	2	
23) Focus is on the student's acquisition of psychomotor skills as reflected in the training plan as well as development in the affective and cognitive domain.	nil	7	6	
24) Logs and Journals are utilized. Dated anecdotal reports are maintained for all students and include details of new learning, attitude changes, training plan updates, and comments made by both the student and supervisor.	nil	9	4	
25) Most co-op teachers are qualified (at least 1 course).	2	2	7	2
26) Co-op teachers have adequate timetable allowance.	8	5	nil	
27) A qualified individual is in a position of responsibility to co-ordinate program delivery in the school.	8	4	nil	1
28) Program is co-ordinated to ensure consistency in policies and procedures.	3	8	1	1
29) There is board level co-ordinator for co-op program.	1	8	4	
30) Personnel at the board level provide liaison between co-terminus boards, the Ministry of Education, and the community.	1	4	8	

SCHOOL INFORMATION SURVEY
STATISTICAL SUMMARY
cont'd

Ministry Goal	#of Schools Below	# of Schools At	# of Schools Above	No Response
31) Audio/visual materials are available for use as well as manuals or textbooks.	nil	10	3	
32) Ready access to a computer and telephone is available.	11	2	nil	
33) The co-op teacher, subject teacher, student services, school administration, parents, and employer/supervisor act as resources for students. Secretarial support is available.	9	4	nil	
34) An assigned and suitable meeting place for the in-school sessions exists.	6	4	2	
35) A performance appraisal form and individualized training plan are combined with anecdotal and numerical rating to assess student progress through the guidance of the co-op teacher, student, employer/supervisor, and subject teacher (where applicable). The remainder of the evaluation is based on student's weekly logs, journals, tests, assignments, pre-employment, orientation and self-evaluation.	1	9	2	
36) Three formal written performance appraisals are completed for each student.	nil	3	10	
37) The student, employer/supervisor, and co-op teacher are involved in the evaluation of student progress.	nil	10	3	
38) Students, employers, and parents are given an opportunity to evaluate the course, training station, and ted classroom activities.	8	4	1	
) Student records are complete in the student's file within the recommended timelines.	2	6	5	

Appendix III

EMPLOYER INFORMATION SURVEY

Section B. Program Delivery Statistical Summary

Note: For each item, employers were asked:

A) How important do you think the goal is?

1-3 not very important
4-6 somewhat important
7-9 very important

B) How well do you believe the program is achieving the goal?

1-3 not very well done
4-6 reasonably well done
7-9 very well done

Ministry Characteristics	A) How important?	B) How well?
1) A minimum of 20 hours of pre-placement orientation occurs.	7.2	6.5
2) Safety is a major topic.	7.2	7.0
3) An individualized training plan is developed within the first two weeks of the placement by the co-op teacher and on-site supervisor.	7.5	6.4
4) The approved training plan is linked to the in-school subject area and reflects sequential training objectives.	7.2	6.2
5) Short and long-term planning occurs involving a variety of strategies WITH INPUT from parents, subject teachers, co-op employers, and students.	7.0	5.8
6) Employers are pre-screened and involved in planning.	7.5	6.4
7) The out-of-school component is directly related to the in-school course of study.	7.1	6.1
8) Co-op teacher directs student learning, and subject teachers, employer/supervisors, and students are often encouraged to assist in the planning and design of methods and learning activities.	7.1	6.2
9) On-site monitoring involves the co-op teacher, subject teacher, student, and training station supervisors.	7.6	6.8
10) If the monitoring teacher is not qualified in the subject area, two of the visitations include a teacher 'Qualified' in that subject.	6.7	5.9
11) Three on-site visitations for every out-of-school credit occurs.	7.4	6.9
12) The monitoring process encompasses both the co-op teacher's observation of the student's performance of tasks and a discussion that includes both the student and the training station supervisor.	7.7	7.0
13) Focus on the student's acquisition of psychomotor skills as reflected in the training plan as well as development in the affective and cognitive domain.	7.1	6.4
14) Logs and journals are utilized. Dated anecdotal reports are maintained for all students and include details of new learning, attitude changes, training plan updates, and comments made by both the student and supervisor.	7.7	6.9
15) There is a board level co-ordinator for the co-op program. NOTE: A majority of the employers who responded have no direct contact with the board co-ordinator. Their contact is the co-op teacher.	6.8	6.4
16) The co-op teacher, subject teacher, student services, school administration, parents and employer/supervisor act as resources for students. Secretarial support is available.	7.4	6.7

EMPLOYER INFORMATION SURVEY

Section B. Program Delivery Statistical Summary cont'd

Ministry Characteristics	A) How important?	B) How well?
17) A performance appraisal form and individualized training plan are combined with anecdotal and numerical rating to assess student progress through the guidance of the co-op teacher, student, employer/supervisor, and subject teacher (where applicable). The remainder of the evaluation is based on student's weekly logs, journals, tests, assignments, pre-employment, orientation and self-evaluation.	7.8	7.3
18) Three formal written performance appraisals are completed for each student.	7.7	7.5
19) The student, employer/supervisor, and co-op teacher are involved in the evaluation of student progress.	8.0	7.5
20) Students, employers, and parents are given an opportunity to evaluate the course, training station, and related classroom activities.	7.5	6.4

Appendix IV

TECHNICAL APPENDIX

T1 Factor Analysis: This statistical procedure identifies clusters of similar items based on the degree of relationship (correlation) among them. A correlation statistic ranges in value from -1.00 to +1.00. Moderate to high positive values indicate that items tend to increase and decrease together, and thus are measuring a similar (or the same) construct. Factor analysis clusters these similar items as one measure, reducing complexity and increasing clarity of interpretation.

T2 Student "skills" and "attitudes" as measured in this study refer to students' self-report of their levels of the skills and attitudes identified as expected outcomes of the co-op program (see Survey A pg __, items 6-13). Where student outcomes are referred to in this report, the reader should keep in mind that the data actually refers to student perceptions of their own skills and attitudes.

T3 Multiple Regression: In this statistical procedure, factors are identified (eg. "placement," years, etc.) which might contribute to outcomes (eg. student skills and knowledge). Based on relationships among factors and between factors and outcomes, and on the nature of the questions, the contribution of factors to the outcome are evaluated consecutively. The extent to which a particular factor contributes to an outcome is reported according to whether or not the effect is significant (eg. more than a chance occurrence) and if so, the percentage of the change (variability) in the outcome score which is associated with similar change in the factor (eg. the extent of co-variation). The variability associated with each factor is removed (partialled out) before subsequent factors are evaluated. Thus, for example, the extent to which "placement" affects student "skills and knowledge" was evaluated AFTER the effects of all previous factors were removed. This technique is well-suited to educational program evaluation where multiple sources of impact are always present. The challenge is to identify and measure as many contributing factors as possible.

T4 11.4% of all students enroled in co-op (1992-92) are exceptional. This is slightly higher than in the secondary population as a whole where 9.6% of the students are exceptional. Only 7.9% of the students in this study (i.e., those who returned both "PRE" and "POST" surveys) are exceptional.

T5 "Co-op Placement": This factor reflects the comparison between students who were and were not placed in jobs during first semester - eg. between those who experienced the program ("treatment" group) and similar students who did not ("control" group).

T6 Measurement Via Self-Report: Self-report is the preferred method of measuring outcomes of the type expected from co-op as it is more direct, more comprehension and less labour intensive than observational methods. Its validity in this study is supported by the following:

1) **The test-retest reliability of the survey items was found to be .70** which is acceptable for research purposes, and indicates that survey items did measure consistently.

T6 cont'd

2) In pre-post self-report studies, accuracy improves on second report, and often results in lower ratings (Mezoff, 1981)[1]. This did occur in the co-op study, indicating that **students were not inflating scores to support the program, but were responding accurately.** (The difference between the "placement" and "comparison" group remains valid; students placed in co-op first semester reported higher scores after that semester than those not placed.)

T7 3) Differences occurred, as result of co-op placement, in student ratings of "skills and knowledge" items, but not on "attitudes and work habits" items. While the reasons for this are not clear, the consistency of this finding does indicate again that students responded thoughtfully and not randomly or in a biased manner.

T8 Co-op students are placed in many different jobs. The working committee categorized these as Business (n=111), Science (n=79), Social Services (n=112), Technical (n=35) and other (n=41). Similarly, there was a large variety of subject areas to which co-op placements were linked and these were categorized as Sciences (n=81), Business (n=120), Technical Studies (n=53), Social Sciences (n=32), Family Studies (n=49) and Other (n=43). No significant differences in students' perceptions of outcomes occurred as a function of either job type or subject area.

1 Mezoff, Bob. (1981) Pre-Then-Post Testing: A Tool to Improve the Accuracy of Management Training Program Evaluation. *Performance and Instruction. Vol. 20 (8),* p. 10.

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